

REMARKS

The rejection of Claims 1-8, 10 and 11 under 35 U.S.C. § 103(a) as anticipated by [sic, unpatentable over] U.S. 4,692,472 (Ingram et al) in view of U.S. 6,167,892 (Iwamoto et al), is respectfully traversed.

The present invention is drawn to a process for the preparation of expandable vinyl aromatic polymers which involves, *inter alia*, polymerizing in the presence of a suspending agent selected from inorganic salts of phosphoric acid and washing with a non-ionic surface-active agent to remove the inorganic salt of phosphoric acid. Particularly, as recited in Claim 1, the invention is process for the preparation of expandable vinylaromatic polymers comprising:

- a) forming expandable beads by polymerizing in aqueous suspension at least one vinylaromatic monomer in the presence of a suspending agent selected from inorganic salts of phosphoric acid;
- b) recovering the expandable beads from the reaction container;
- c) washing the expandable beads thus obtained with an aqueous solution containing 0.005-2% by weight of a non-ionic surface-active agent;
- d) recovering the washed expandable beads substantially without any inorganic salt of phosphoric acid, on the surface, and drying them in a stream of air.

Ingram et al is drawn to a process for the preparation of expandable vinyl aromatic copolymers derived from monomers inclusive of divinylbenzene as a comonomer (column 1, lines 46-49). The copolymers may be prepared by aqueous suspension polymerization in the presence of an inorganic suspending agent such as tricalcium phosphate and a suitable modifier (paragraph bridging columns 1 and 2). As recited in Claim 2 therein, and disclosed in Example I, the suspending agent may also include polyoxyethylene(20)sorbitan monolaurate non-ionic surfactant.

However, as previously pointed out by Applicants and as the Examiner apparently now concedes, Ingram et al does not employ the above-discussed non-ionic surfactant to wash already prepared vinylaromatic polymer beads to remove the tricalcium phosphate suspending agent. Rather, Ingram et al includes the non-ionic surfactant as part of the suspending agent system. Indeed, said Example I discloses washing the beads with water alone (column 4, lines 66-67). The Examiner thus relies on Iwamoto et al.

Iwamoto et al is drawn to a method of washing pre-expanded particles having a substantially water insoluble inorganic compound attached thereto by contacting the pre-expanded particles with an aqueous washing solution of a water soluble compound which, *inter alia*, has 1-500 surface bonding functional groups and 1-500 hydrophilic functional groups, wherein at least one of the surface bonding functional groups of the water soluble compound attaches to the water insoluble inorganic compound (Abstract). The hydrophilic functional group is a group such as a polar group or a dissociated group, which weakly bonds to water molecule by electrostatic mutual function of hydrogen bond, and which shows affinity with water (column 4, lines 10-13). The water soluble compound is disclosed as having a functional group that is charged oppositely to the functional group of the water insoluble inorganic compound to which it is to be attached. Thus, for example, when tricalcium phosphate, whose surface is charged with positive electricity is used, the water soluble compound will have a functional group capable of bonding thereto, such as an anionic functional group; when a material, such as kaolin, whose surface is charged with negative electricity is used, the water soluble compound will have a cationic functional group (column 4, line 14 ff). Thus, the water soluble compound of Iwamoto et al need not be a surfactant, nor are non-ionic surfactants disclosed, since the water soluble compound is necessarily positively or negatively charged, i.e., it is an **ionic** compound. While the Examiner specifically mentions the disclosure of an alcoholic hydroxyl group (column 4, line

55), and polyoxyethylenealkylamine (column 4, lines 61-62) of Iwamoto et al, this disclosure is contained within the particular disclosure of water soluble compounds having a cationic functional group (column 4, line 46 ff). Note that when Iwamoto et al uses the term “group”, Iwamoto et al means “ion” (column 4, lines 52 and 54).

In sum, even if one skilled in the art were to combine Ingram et al and Iwamoto et al, the result would still not be the presently-claimed invention.

For all the above reasons, it is respectfully requested that the rejection be withdrawn.

The rejection of Claims 1-10 and 14 under 35 U.S.C. § 103(a) as unpatentable over U.S. 6,414,041 (Glück) in view of Iwamoto et al, is respectfully traversed.

Glück is drawn to the preparation of expandable polystyrene beads in aqueous suspension in the presence of, *inter alia*, graphite. However, Glück discloses and suggests nothing with regard to washing their polystyrene beads to remove a tricalcium phosphate suspending agent with a non-ionic surface-active agent.

The Examiner concedes that Glück does not disclose washing with a non-ionic surfactant. The Examiner thus relies on Iwamoto et al.

As discussed above, Iwamoto et al does not disclose the use of a non-ionic surfactant in a washing agent. Thus, even if Glück and Iwamoto et al were combined, the result would still not be the presently-claimed invention. Accordingly, it is respectfully requested that this rejection be withdrawn.

The rejection of Claims 1, 12 and 13 under 35 U.S.C. § 103(a) as unpatentable over U.S. 6,221,926 (Oohara et al) in view of Iwamoto et al, is respectfully traversed.

Oohara et al is drawn to foamable modified polystyrene resin particles and a process for preparation thereof (column 1, lines 8-9). The Examiner concedes that Oohara et al does not disclose a washing procedure with a non-ionic surfactant. The Examiner thus relies on Iwamoto et al.

As discussed above, Iwamoto et al does not disclose the use of a non-ionic surfactant in a washing agent. Thus, even if Oohara et al and Iwamoto et al were combined, the result would still not be the presently-claimed invention. Accordingly, it is respectfully requested that this rejection be withdrawn.

Applicants **again** respectfully call the Examiner's attention to the Information Disclosure Statement (IDS) filed December 14, 2004. The Examiner is respectfully requested to initial the Form PTO 1449 submitted therewith, and include a copy thereof with the next Office communication. A copy of the Form PTO 1449 is **submitted herewith** for the Examiner's convenience.

Moreover, since the date of the IDS is before the date of the Office Action and thus technically was part of the Official file as of the Office Action date, Applicants respectfully request that should the Examiner determine that a new ground of rejection needs to be made in the next Office Action relying in whole or in part on any of the references cited in the IDS, then said next Office Action not be made Final, even if the new rejection was necessitated by the present amendment to the claims.

All of the presently-pending claims in this application are believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon



Harris A. Pitlick
Registration No. 38,779

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

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